This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-28 (canceled)

Claim 29 (new): A composition comprising a ion-dissociative functional compound represented by a chemical formula as follows:

C_m-$(CF_2$-Gp1$)_n$

where, m is a natural number for carbon atoms to form a spherical carbon molecule; n is a natural number; and Gp1 denotes an ion-dissociative group.

Claim 30 (new): The composition as defined in claim 29, wherein C_m denotes a fullerene molecule.

Claim 31 (new): The composition as defined in claim 29, wherein the ion-dissociative group is a proton-dissociative group selected from the group consisting of hydrogensulfate ester group (-OSO_2OH), sulfonic acid group (-SO_2OH), dihydrogen phosphate ester group (-$OPO(OH)_2$), hydrogen phosphate ester group (-OPO(OH)-), phosphono group (-$PO(OH)_2$), carboxyl group (-COOH), sulfoneamide group (-SO_2-NH_2), sulfoneimide group (-SO_2-NH-SO_2-), methanedisulfonyl group (-SO_2-CH_2-SO_2-), carboxamide group (-CO-NH_2), and carboximide group (-CO-NH-CO-).

Claim 32 (new): An ionic conductor which contains the ion-dissociative functional compound defined in any of claims 29 to 31.

Claim 33 (new): A method for producing an ion-dissociative functional compound, said method including reacting C_m, where m is a natural number for carbon atoms to form a spherical carbon molecule, with I-CF_2-SO_2F; and synthesizing C_m-$(CF_2$-$SO_2F)_n$, where n is a natural number.

Claim 34 (new): The method for producing the ion-dissociative functional compound as defined in claim 33, wherein synthesizing C_m-$(CF_2$-$SO_2F)_n$ employs C_6F_6 and/or CS_2 as a solvent.

Claim 35 (new): The method for producing the ion-dissociative functional compound as defined in claim 33, which includes hydrolyzing C_m-$(CF_2$-$SO_2F)_n$ under a basic condition, thereby producing an ion-dissociative functional compound represented by a first chemical formula as follows:

C_m-$(CF_2$-$SO_3M^1)_n$

where, m is a natural number for carbon atoms to form a spherical carbon molecule; n is a natural number; and M^1 denotes an alkali metal atom.

Claim 36 (new): The method for producing the ion-dissociative functional compound as defined in claim 33, which includes substituting a hydrogen ion for the cation of the alkali metal atom M^1 of the ion-dissociative functional compound represented by the first chemical formula, thereby producing a proton-dissociative functional compound represented by a second chemical formula as follows:

C_m-$(CF_2$-$SO_3H)_n$

where, m is a natural number for carbon atoms to form a spherical carbon molecule; and n is a natural number.

Claim 37 (new): A composition comprising an ion-dissociative functional compound having a linkage structure represented by a chemical formula as follows:

C_m-CF_2-Gp2-CF_2-C_m

where, m is a natural number for carbon atoms to form a spherical carbon molecule; and Gp2 denotes an ion-dissociative group.

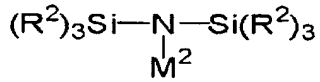
Claim 38 (new): The composition as defined in claim 37, wherein C_m is a fullerene molecule.

Claim 39 (new): The composition as defined in claim 37, wherein the ion-dissociative group is a sulfoneimide group.

Claim 40 (new): A method for producing an ion-dissociative functional compound, said method comprising:

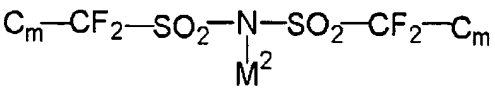
reacting C_m, where m is a natural number for carbon atoms to form a spherical carbon molecule with I-CF_2-SO_2F to give C_m-(CF_2-SO_2F)$_n$, where n is a natural number; and

reacting said C_m-(CF_2-SO_2F)$_n$ with a compound represented by a first chemical formula as follows:



where M^2 denotes an alkali metal atom or -Si(R^2)$_3$, and R^2 denotes an alkyl group.

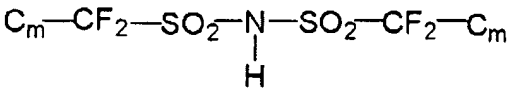
Claim 41 (new): The method for producing the ion-dissociative functional compound as defined in claim 40, wherein the ion-dissociative functional compound has a linkage structure represented by a second chemical formula as follows:



where m is a natural number for carbon atoms to form a spherical carbon molecule; and M^2 denotes an alkali metal atom.

Claim 42 (new): The method for producing the ion-dissociative functional compound as defined in claim 40, wherein C_6F_6 and/or CS_2 are employed as solvents to produce C_m-(CF_2-SO_2F)$_n$.

Claim 43 (new): The method for producing the ion-dissociative functional compound as defined in claim 41, which includes substituting a hydrogen ion for the cation of the alkali metal atom M^2 of the ion-dissociative functional compound having the linkage structure represented by a the second chemical formula above, thereby producing the proton-dissociative functional compound represented by a third chemical formula as follows:



where, m is a natural number for carbon atoms to form a spherical carbon molecule.

Claim 44 (new): An ionic conductor of a fullerene derivative comprising a difluoromethylene group combining with both an ion-dissociative group (Gp3) and a fullerene molecule.

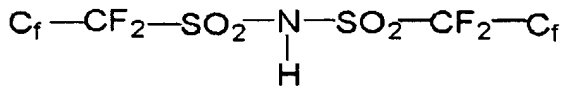
Claim 45 (new): The ionic conductor as defined in claim 44, wherein the fullerene molecule is C_f, where f is 36, 60, 70, 76, 78, 80, 82, or 84.

Claim 46 (new): The ionic conductor as defined in claim 45, wherein the fullerene molecule is C_{60} or C_{70}.

Claim 47 (new): The ionic conductor as defined in claim 44, wherein at least one of the ion-dissociative groups (Gp3) is a proton-dissociative group selected from the group consisting of hydrogensulfate ester group (-OSO_2OH), sulfonic acid group (-SO_2OH), dihydrogen phosphate ester group (-$OPO(OH)_2$), hydrogen phosphate ester group (-OPO(OH)-), phosphono group (-$PO(OH)_2$), carboxyl group (-COOH), sulfoneamide group (-SO_2-NH_2), sulfoneimide group (-SO_2-NH-SO_2-), methanedisulfonyl group (-SO_2-CH_2-SO_2-), carboxamide group (-CO-NH_2), and carboximide group (-CO-NH-CO-).

Claim 48 (new): The ionic conductor as defined in claim 44, wherein fullerene molecules are joined together by a linking group.

Claim 49 (new): The ionic conductor as defined in claim 48, wherein the linking group contains a sulfoneimide group and has the linking structure represented by a chemical formula as follows:



where C_f denotes the fullerene molecule as defined above.

Claim 50 (new): The ionic conductor as defined in claim 44, wherein the polymer has a proton-dissociative group selected from the group consisting of hydrogensulfate ester group ($-OSO_2OH$), sulfonic acid group ($-SO_2OH$), dihydrogen phosphate ester group ($-OPO(OH)_2$), hydrogen phosphate ester group (-OPO(OH)-), phosphono group ($-PO(OH)_2$), carboxyl group (-COOH), sulfoneamide group ($-SO_2-NH_2$), sulfoneimide group ($-SO_2-NH-SO_2-$), methanedisulfonyl group ($-SO_2-CH_2-SO_2-$), carboxamide group ($-CO-NH_2$), and carboximide group (-CO-NH-CO-).

Claim 52 (new): The ionic conductor as defined in claim 44, which is in the form of membrane composed of the ionic conductor and a polymer binder mixed or compounded together.

Claim 53 (new): An electrochemical device comprising an ionic conductor held between a first electrode and a second electrode so as to conduct ions from the first electrode to the second electrode, wherein the ionic conductor is one which is defined in any of claims 44 to 52.

Claim 54 (new): The electrochemical device as defined in claim 53, wherein the ionic conductor is in the form ranging from about film having a thickness of 20 μm to about 30 μm.

Claim 55 (new): The electrochemical device as defined in claim 53, wherein the ionic conductor is a proton conductor, and the electrochemical device is a fuel cell.

Claim 56 (new): The electrochemical device as defined in claim 55, wherein the ionic conductor is in the form of film with a thickness large enough to exhibit self-humidifying properties.

Claim 57 (new): The electrochemical device as defined in claim 55, which is a fuel cell that relies on hydrogen or methanol for its energy source.